

Users Manual

EV8280U-MD

Speed Dome Camera

Firmware Version 1.1.2
Document Revision A



About This Guide

The User's Manual provides functionality and instructions for the 1080p/5M series which includes the following model series:

- EV8180
- EV8280
- EV8580
- EV8780
- EV8781
- EV8582
- EV8383
- EV8581
- EV8782

Before Using the IP Camera/Video Server

- ✓ Check the PC requirements
- ✓ Review the OS platform requirements
- ✓ Read an special and import precautionary information
- ✓ Having basic knowledge of network setup and configuration will be helpful

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1	INTRODUCTION	1
2	THE LIVE VIEW	2
2.1	Live View, Setup & Client Setup	3
	Client Setup.....	3
2.2	Controls and Status	4
	EV8280	4
2.3	Digital Zoom	5
2.4	Information	5
2.5	Streaming	5
2.6	Audio	6
2.7	Control (PTZ Control)	6
	EV8280 Control	6
3	SETUP	8
3.1	System – Information	9
3.2	System – Generic Setting.....	9
	Camera Name	9
	System Time	10
	Camera Lens (for EV8180 models only)	10
	Digital Input	10
	LED	10
	HTTP Port	11
	Language	11
3.3	System – User Account Management	11
3.4	System – Maintenance.....	12
	Firmware Update.....	12
	Export/Import Camera Configuration.....	15
	Restore Factory Default	16
	Reboot Device.....	16
3.5	System – Local Storage	16
3.6	System – Record Setting.....	16
	Event-Triggered Recording	17
	Continuous Recording.....	17
3.7	Network – IP Setting.....	18
	IP Setting.....	18
	WLAN Setting.....	18
3.8	Network – Streaming	19

3.9	Network – DDNS	21
3.10	Video/Audio – Video Setting	21
	TV Output	22
	Resolution Mode (EV8x80F Models Only)	22
	Time Stamp & Camera Name	22
	Profile Setting	23
3.11	Video/Audio – Audio Setting	24
3.12	Video/Audio – Color Setting	25
	Day/Night Setting	25
	Color & Sensor Settings	26
3.13	Video/Audio – Text Overlay	27
3.14	Video/Audio – Privacy Mask	27
3.15	Event Handle – Event Rule	28
3.16	Event Handle – Event Server	29
	Email Setting	29
	Network Storage	30
3.17	Event Handle – Motion Detection	30
3.18	PTZ Control – Serial Setting	30
3.19	System Log – View Log	31
3.20	System Log – Remote Log Setting	31
4	STREAMING VIDEO	32
4.1	RTSP Streaming	32
	Authentication	32
4.2	Image Snapshot in a Browser	33
5	ROUTER/FIREWALL CONFIGURATION	34
5.1	Streaming Router Configuration	34
	Camera Router/Firewall	35
	Client Router/Firewall	36
6	MOTION JPEG IN A BROWSER	38
7	EV8280 PTZ CONTROL SETTINGS	39
7.1	PTZ Control – General Setting	39
	Home Function	39
	Zoom Setting	39
7.2	PTZ Control – Patrol Setting	40
7.3	PTZ Control – Auto Scan Setting	41
7.4	PTZ Control – Privacy Mask Setting	42
8	ADDING A CAMERA TO AN NVR	45

8.1	RTSP URL.....	45
8.2	Administrator User & Password	46
9	FIREFOX	47
10	DIGITAL INPUT/OUTPUT	48
10.1	Digital Input	48
10.2	Digital Output	49
11	DOCUMENT CHANGE LOG	50
11.1	Document Version A.....	50

1 INTRODUCTION

This guide is for the use with the 1080p/5MP series using firmware version 1.1.2.002.

2 THE LIVE VIEW

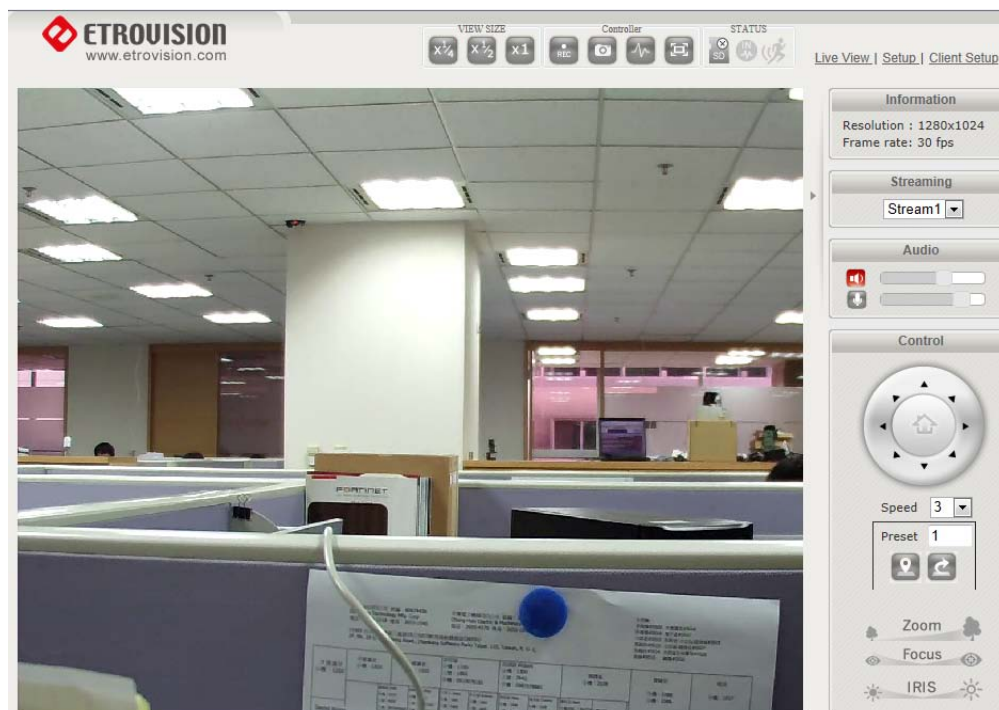
The IP camera web interface is made up of two main pages: the Live View page and the Setup page. The Live View provides the current display from the IP camera along with selected settings, configuration and functionality.

A login is required to access the web UI. The administrator username is “root”, and the password by default is “pass”.

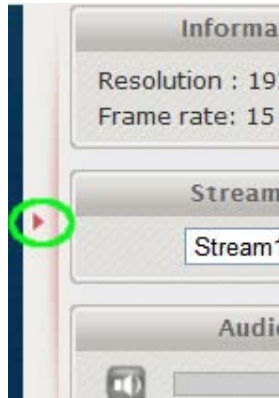


After logging into the IP camera via the browser, the user is first presented with the Live View interface.

Below is an example of the Live View page. Following the screenshot is a discussion of the different areas within the Live View page.



The right hand panel (Information, Streaming, Audio, Control) can be hidden by clicking the small arrow bordering the video and Streaming pane.



Click the arrow (highlighted in green) to hide/display the right side panel.

2.1 Live View, Setup & Client Setup

In the top right corner of the screen are three links.

[Live View](#) | [Setup](#) | [Client Setup](#)

- Live View: the main viewing screen with various controls.
- Setup: provides the interface for most of the camera configuration.
- Client Setup: configuration for PC client settings such as storage directory, and web UI streaming preferences.

Client Setup

The Client Setup provides options to modify the recording path, streaming protocol and buffering time. Streaming protocol and buffering time relate to streaming settings for the web UI on the client PC. These settings are only applied for the browser session, and don't persist after the browser is closed.

Settings apply to a specific PC; they are not universal.

Recording Path

Recording Path is used to define the directory where snapshot images and video will be stored.

Streaming Protocol

RTP/RTSP over HTTP is the default. This is the most flexible setting in that it streams using port 80 which should likely require no client router configuration.

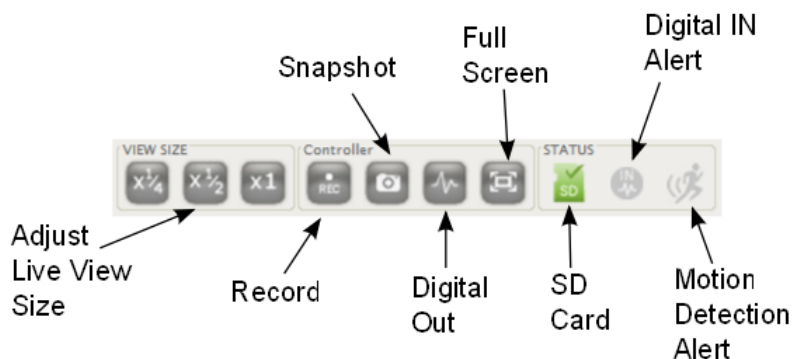
RTP over UDP may use less bandwidth than the other options, but it may also result in inferior video quality since packets may be lost in transmission (more common over WAN) and may require additional router client configuration for UDP traffic.

See section 5 **Router/Firewall Configuration** for more information on network configuration considerations.

Buffering Time

Buffering Time can be increased if video appears to lag due to network latency. However, an increased buffer will result in increased lag between real time.

2.2 Controls and Status



The View Size controls adjust the viewable screen size in Live View. The Zoom feature can be used, and

Record and Snapshot will capture video/snapshots to the local hard drive.

Digital Out will trigger a digital output signal (e.g. to an alarm).

Full Screen will display video in full screen mode. Click the **Esc** key to exit Full Screen mode.

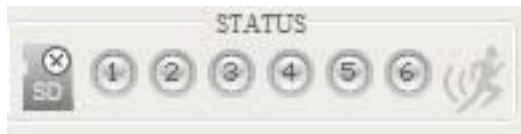
SD Card shows the status of the SD card.

Digital In Alert will display when a digital in alert has been triggered.

Motion Detection Alert will display when motion detection has been triggered.

EV8280

The EV8280 speed dome camera has 6 digital input connections. Therefore, the Live View Digital IN alert displays 6 separate signals labeled 1-6.



2.3 Digital Zoom

The Digital Zoom feature allows zooming in on a specific area. When using the View Size controls, a magnifying glass icon will replace the mouse pointer icon.



To magnify a specific area, place the magnifying glass icon over the desired area and left click the mouse. Additional left mouse clicks will continue to magnify wherever the mouse is placed.

To zoom out, right click the mouse.

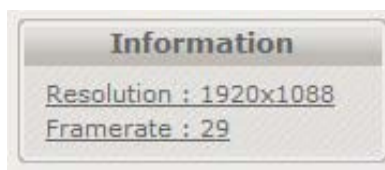
If the mouse is moved to the edge of the image window, the mouse icon will change to a white, triangular icon.



This icon allows moving the view using electronic PTZ if the functionality is available and enabled.

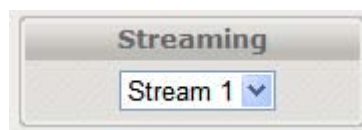
2.4 Information

Resolution and frame rate will be displayed in the Information pane.



2.5 Streaming

To toggle between different video streams, use the Stream drop down list.



The number of ROI which are enabled in the Video Setting – Profile Setting will determine the number of streams available for viewing. See the “Video Control – Video Setting” section for more information.

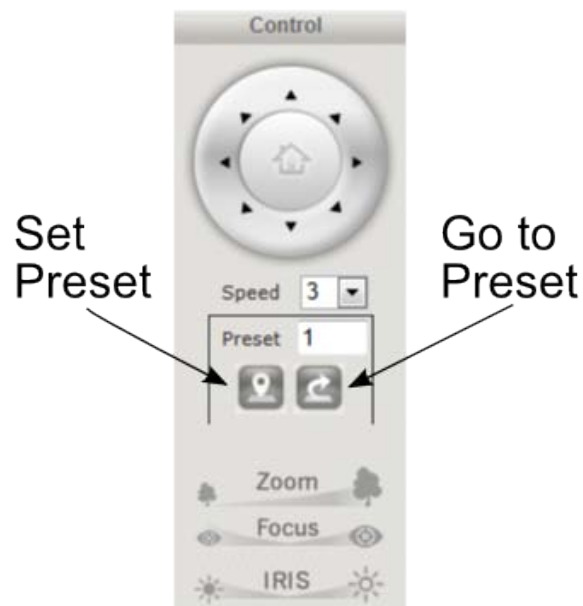
2.6 Audio

Audio volume controls for speaker and microphone. Clicking on the icon will mute or enable.



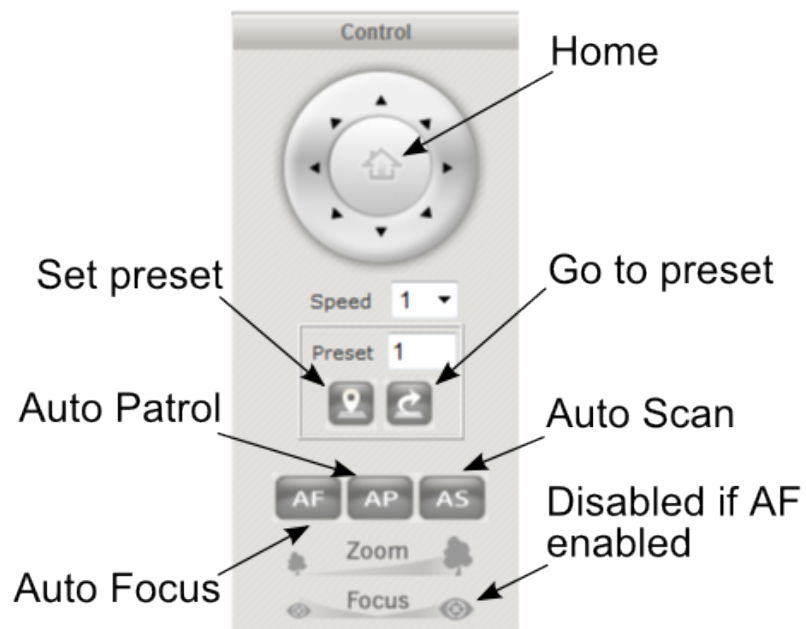
2.7 Control (PTZ Control)

The PTZ control panel will not be present in those models where PTZ will not be used (e.g. EV8580). Use the Set Preset button to mark a preset, and the Go to Preset button to use a preset.



EV8280 Control

The EV8280 speed dome camera has some additional PTZ controls displayed in the Control panel. For more information about the EV8280's PTZ functionality, see the section **EV8280 PTZ Control Settings**.



3 SETUP

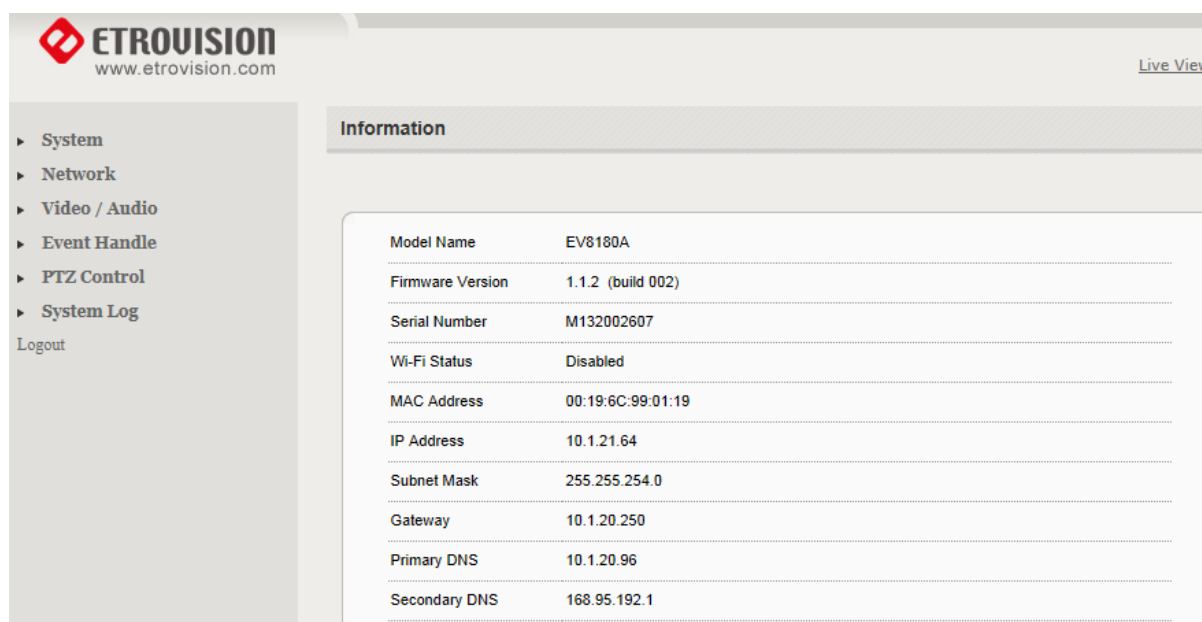
The web interface is made up of two main pages: the Live View page and the Setup page. The Live View page interface was introduced in the previous section.

The Setup interface is primarily used for viewing and configuring the IP camera's settings.

From the Live View page, click the Setup link at the top right side:



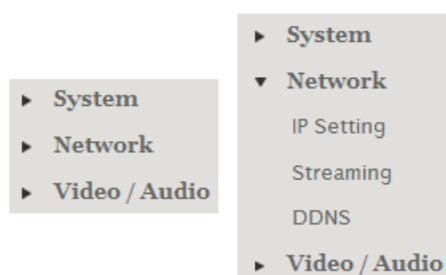
Below is a screenshot of the Setup page. The initial page displayed is the "System Information" page.



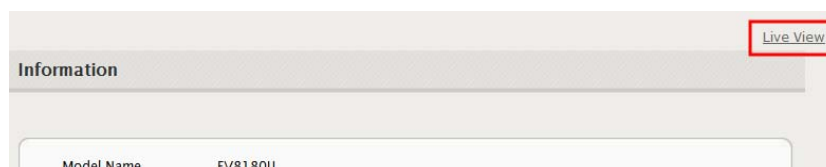
The screenshot shows the ETROVISION web interface. The top left has the logo and website URL. The top right has a 'Live View' link. A left sidebar lists configuration categories: System, Network, Video / Audio, Event Handle, PTZ Control, System Log, and Logout. The main area is titled 'Information' and contains a table of system details.

Model Name	EV8180A
Firmware Version	1.1.2 (build 002)
Serial Number	M132002607
Wi-Fi Status	Disabled
MAC Address	00:19:6C:99:01:19
IP Address	10.1.21.64
Subnet Mask	255.255.254.0
Gateway	10.1.20.250
Primary DNS	10.1.20.96
Secondary DNS	168.95.192.1

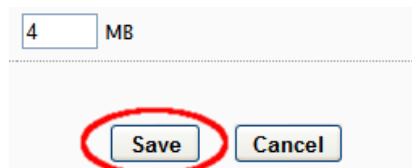
The left hand panel lists the configuration nodes which can be viewed and modified. Clicking on an item will reveal sub menus which are available.



To return to the Live View page, click the Live View link in the right hand corner.



NOTE: Configuration changes in the Setup interface require clicking the **SAVE** button. Otherwise, changes will not be applied.



A configuration interface snippet showing a text input field containing the number '4' followed by the unit 'MB'. Below this field are two buttons: 'Save' and 'Cancel'. The 'Save' button is highlighted with a red circle.

The following discusses the different basic configuration options within the Settings page.

3.1 System – Information

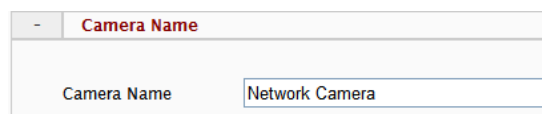
Model Name	EV8180A
Firmware Version	1.1.2 (build 002)
Serial Number	M132002607
Wi-Fi Status	Disabled
MAC Address	00:19:6C:99:01:19
IP Address	10.1.21.64
Subnet Mask	255.255.254.0
Gateway	10.1.20.250
Primary DNS	10.1.20.96
Secondary DNS	168.95.192.1

The Information page is always the initial page displayed when switching to the Setup view. Basic information related to the IP camera is displayed here.

The page only displays information; no changes can be made here.

3.2 System – Generic Setting

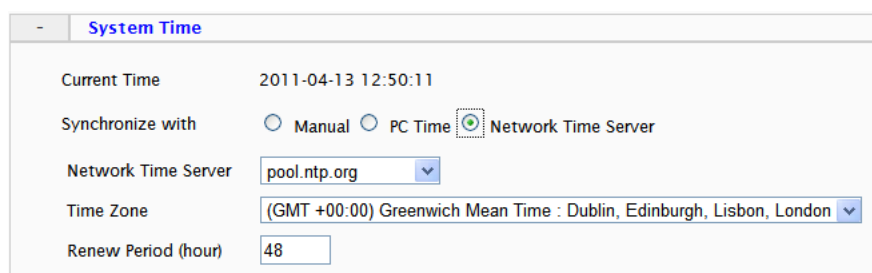
Camera Name



A configuration interface snippet for 'Camera Name'. It shows a label 'Camera Name' next to a text input field containing the text 'Network Camera'.

Enter a camera name if a specific name is desired.

System Time



The screenshot shows a 'System Time' configuration window. It displays the 'Current Time' as 2011-04-13 12:50:11. Under 'Synchronize with', three radio buttons are present: 'Manual', 'PC Time', and 'Network Time Server'. The 'Network Time Server' option is selected. Below this, the 'Network Time Server' is set to 'pool.ntp.org' in a dropdown menu. The 'Time Zone' is set to '(GMT +00:00) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London' in another dropdown. The 'Renew Period (hour)' is set to '48' in a text input field.

3 options are available:

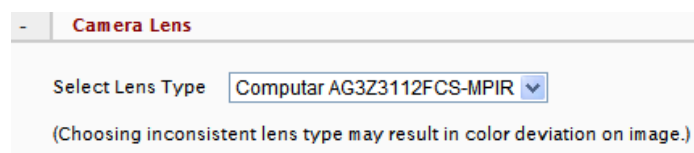
- Manual: insert time manually
- PC Time: set to the current PC time
- Network Time Server: periodically synchronizes with a time server

For **Network Time Server** two standard options are provided. If another time server is preferred, then choose **others** from the list and add the address of the time server which will be used.

Renew Period specifies the synchronization schedule.

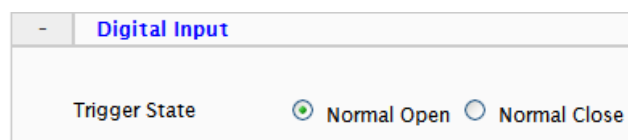
Camera Lens (for EV8180 models only)

Select the appropriate lens type for the camera. A mismatch between the Camera Lens setting and the actual lens type may result in color deviation.



The screenshot shows a 'Camera Lens' configuration window. It has a 'Select Lens Type' dropdown menu currently set to 'Computar AG3Z3112FCS-MPIR'. Below the dropdown, a note states: '(Choosing inconsistent lens type may result in color deviation on image.)'

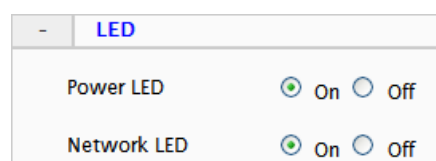
Digital Input



The screenshot shows a 'Digital Input' configuration window. It features a 'Trigger State' section with two radio buttons: 'Normal Open' and 'Normal Close'. The 'Normal Open' option is selected.

This defines the method by which the digital in sensor operates. If the normal condition is open (N.O.), then the alarm will be triggered when the circuit is closed. The opposite applies for N.C.

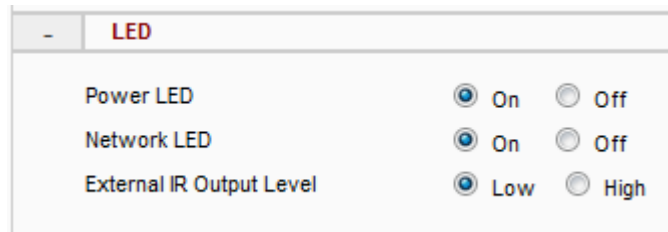
LED



The screenshot shows an 'LED' configuration window. It contains two rows of controls. The first row is for 'Power LED' with 'On' and 'Off' radio buttons; 'On' is selected. The second row is for 'Network LED' with 'On' and 'Off' radio buttons; 'On' is selected.

The camera LED lights can be enabled or disabled.

The EV8781 has an additional setting which controls operation of an external IR LED source.



The LED settings interface shows three options: Power LED, Network LED, and External IR Output Level. Each option has two radio buttons: On and Off for the first two, and Low and High for the last one. All 'On' and 'Low' options are selected.

LED	
Power LED	<input checked="" type="radio"/> On <input type="radio"/> Off
Network LED	<input checked="" type="radio"/> On <input type="radio"/> Off
External IR Output Level	<input checked="" type="radio"/> Low <input type="radio"/> High

The **External IR Output Level** controls the circuit voltage which is used to turn on/off the external IR LED.

NOTE: Refer to the external IR LED manufacturer's recommendation to properly set the **External IR Output Level**.

Low = Active Low: no voltage turns on the external IR LED; voltage turns off the IR LED

High = Active High: voltage turns on the external IR LED; no voltage turns off the IR LED

HTTP Port

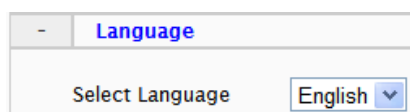


The HTTP Port settings interface shows a text input field labeled 'HTTP Port' with the value '80'.

HTTP Port	
HTTP Port	80

To use a non-default port, change the HTTP Port value. This port is used by the camera's web server and HTTP streaming.

Language

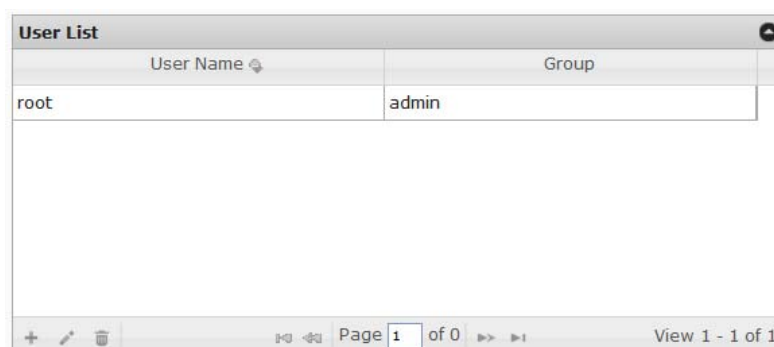


The Language settings interface shows a dropdown menu labeled 'Select Language' with 'English' selected.

Language	
Select Language	English

Currently English, Simplified Chinese, Czech, French, German, Russian and Italian are available.

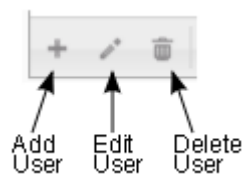
3.3 System – User Account Management



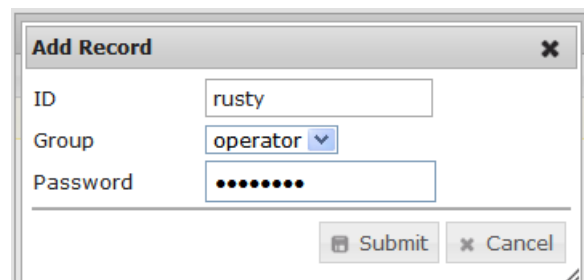
The User List interface shows a table with two columns: User Name and Group. The table contains one row with 'root' in the User Name column and 'admin' in the Group column. The interface also includes a toolbar with icons for adding, editing, and deleting users, and a pagination bar showing 'Page 1 of 0' and 'View 1 - 1 of 1'.

User Name	Group
root	admin

User accounts can be added, edited or deleted via the controls in the left corner.



Users are assigned to a group (admin, operator or viewer).



To edit or delete an account, highlight the account in the User List window and click the edit/delete button.

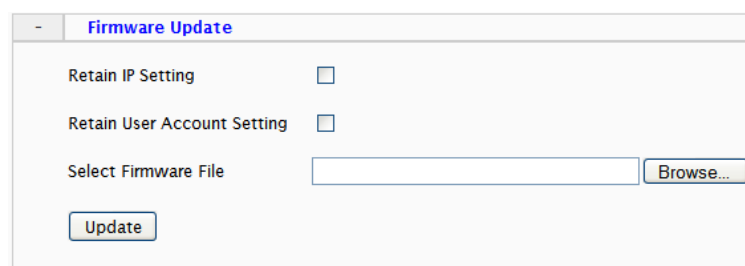
After making changes, click **SAVE** to apply changes.

3.4 System – Maintenance

Firmware Update

The firmware can be upgraded using the web UI or an SD card. After upgrading, the ActiveX controls and browser cache should be cleaned to prevent old controls & pages from being used.

Web UI Firmware Upgrade



IP and User Account settings can be preserved by checking the appropriate boxes. After selecting the new firmware file, click **Update** to proceed. Messages that the camera is upgrading and rebooting will follow during the upgrade.



**Rebooting, please wait
57 secs**

Perform the steps in “Clean the ActiveX and IE Cache & History” below, using Etroscan change the network settings (if applicable), then check the System Information page to verify the upgrade has been completed successfully.

Upgrade using SD Card

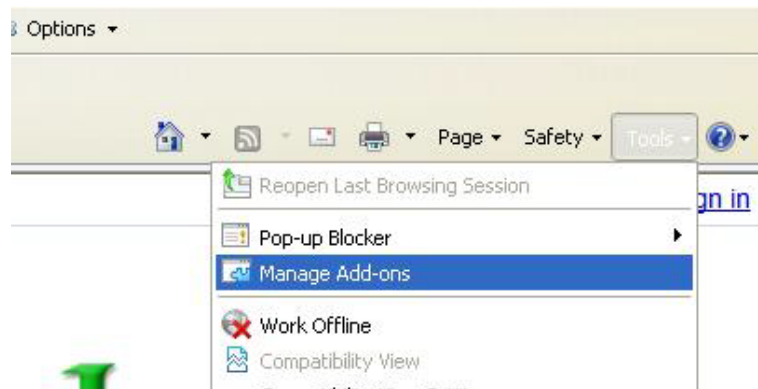
The SD card should be empty of any existing files before proceeding.

1. Rename the firmware file to **ev-fw.bin**, and copy the file to the SD card.
2. Insert the card into the camera’s SD card slot.
3. Power on the camera, and wait about 1 minute.
The green power LED will flash quickly during the upgrade, become stable briefly and slowly blink while performing a reboot.
4. Check EtroScan to verify the camera is available (IP address may have changed to factory default, 192.168.1.2).
5. Remove the SD card.
6. After web UI access is once again available, review the System Information page to verify the upgrade has completed successfully.

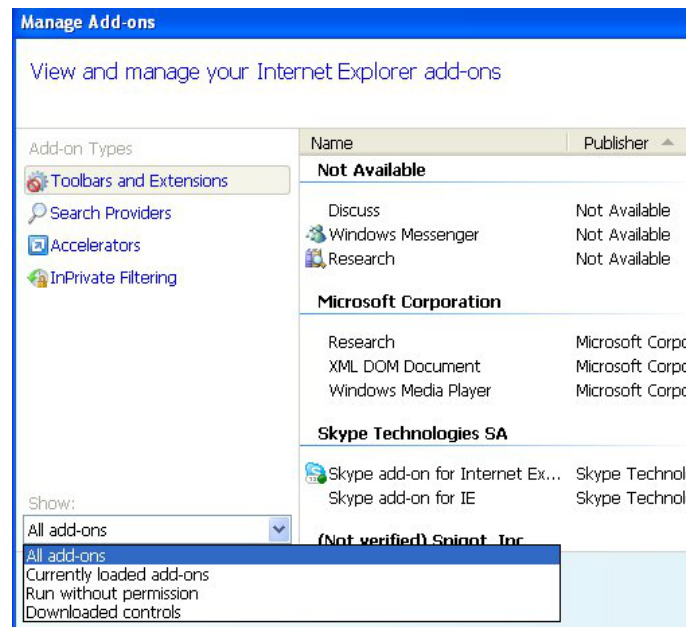
Clean the ActiveX and IE Cache & History

After upgrading, the ActiveX controls and IE cache & history should be cleared to prevent old pages and controls from being used.

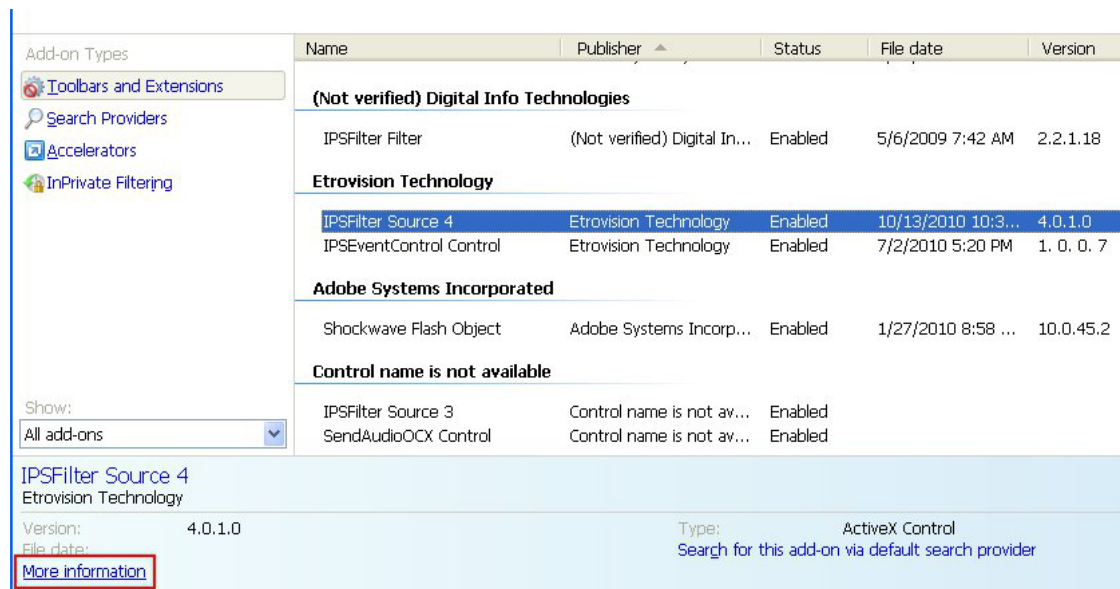
Close all instances of IE and open 1 IE window. In the right corner, select **Tools->Manage Add-ons**



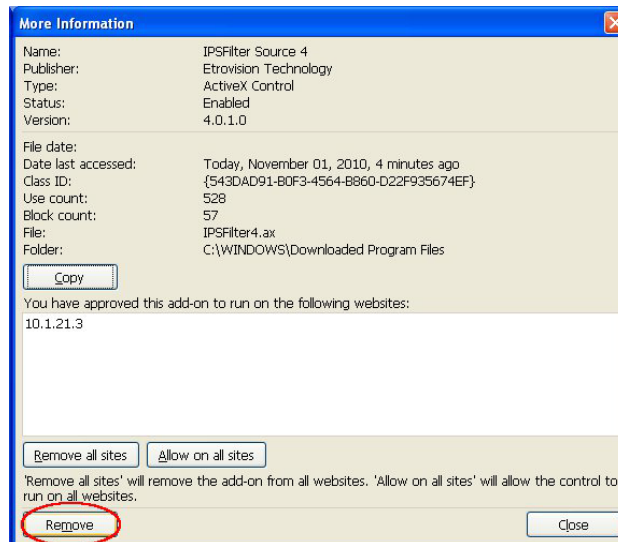
In the Manage Add-ons window, select “All add-ons”



Scroll down and find Etrovision Technology, highlight one of the ActiveX controls, and click the **More Information** link.

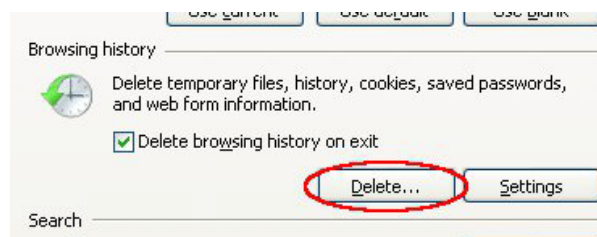


In the More Information window, click **Remove** to clear the ActiveX control from IE.

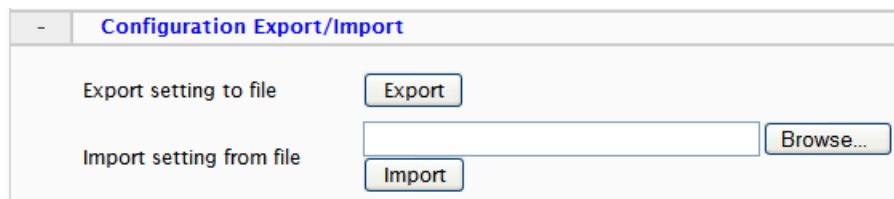


Repeat this for the remaining Etrovision Technology ActiveX components.

To clear the cache and browsing history, in the IE menu select **Tools->Internet Options**. Click the **Delete** button in Browsing History.



Export/Import Camera Configuration

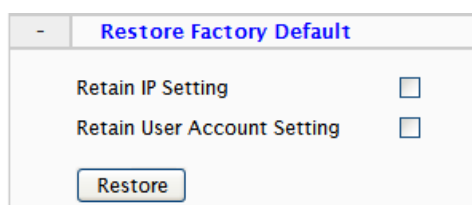


Export will save the camera's configuration settings to the PC in an archive file.

To import, first use **Browse** to select a camera's exported configuration file. Next click **Import** to proceed with replacing the current camera settings with the settings in the configuration file.

NOTE: Configuration settings can only be imported from a camera of the same model and using the same firmware version. Otherwise, the import will apply the factory default settings.

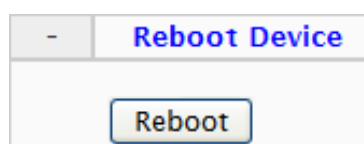
Restore Factory Default



The screenshot shows a web interface titled "Restore Factory Default". It contains two checkboxes: "Retain IP Setting" and "Retain User Account Setting", both of which are currently unchecked. Below these checkboxes is a button labeled "Restore".

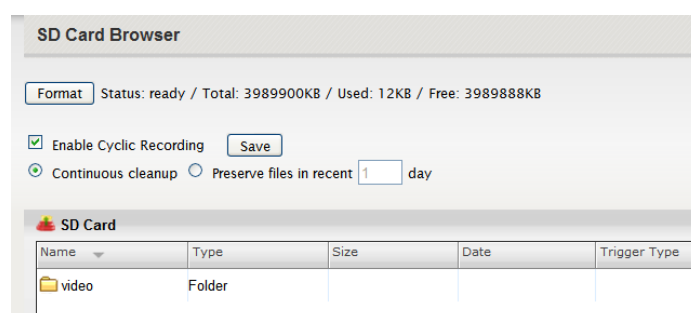
Replaces factory default settings via the web UI. Network and/or user account settings can be saved if the corresponding check boxes are selected.

Reboot Device



The screenshot shows a web interface titled "Reboot Device". It contains a single button labeled "Reboot".

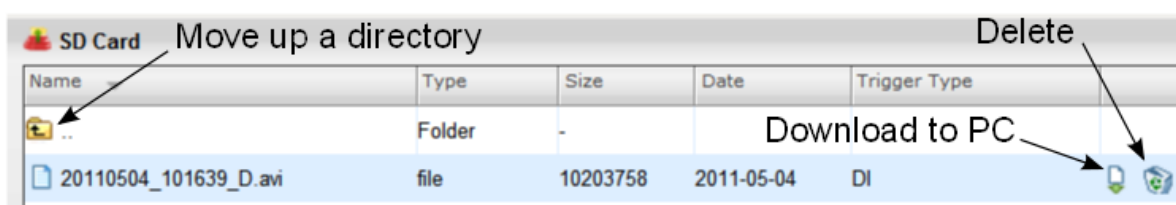
3.5 System – Local Storage



The screenshot shows the "SD Card Browser" web interface. At the top, there is a "Format" button and a status bar indicating "Status: ready / Total: 3989900KB / Used: 12KB / Free: 3989888KB". Below this, there are two options: "Enable Cyclic Recording" (checked) and "Continuous cleanup" (unchecked). A "Save" button is next to the "Enable Cyclic Recording" option. Below the options, there is a table with the following columns: Name, Type, Size, Date, and Trigger Type. The table contains one entry: a folder named "video".

Format will format the card. **Note:** contents of the SD card will be lost.

Double click on folders to go up/ down a directory level.



This screenshot shows the "SD Card" section of the web interface with several annotations. An arrow points to the "Move up a directory" button (represented by a folder icon with an upward arrow) with the text "Move up a directory". Another arrow points to the "Delete" button (represented by a trash can icon) with the text "Delete". A third arrow points to the "Download to PC" button (represented by a download icon) with the text "Download to PC". The table below shows a file named "20110504_101639_D.avi" with a size of 10203758, dated 2011-05-04, and a trigger type of "DI".

3.6 System – Record Setting

There are 2 methods of recording: Event-Triggered and Continuous Recording. Both can be used simultaneously.

Event-Triggered Recording

Recording Setting	
Event-Triggered Recording	
Enable	<input type="checkbox"/>
Stream Source	1 ▾
Recording Storage	Network Storage ▾
Pre-alarm Buffer	4 MB
Post-alarm Buffer	4 MB

When recording is done via event triggers, Record Setting will define how the recording is performed. Stream Source will only display currently enabled video profile streams.

The pre-alarm and post-alarm buffer are defined in terms of size (MB). The min/max for the settings are based on the stream's resolution & bit rate. So, if the stream source is a small resolution size, then the pre-alarm and post-alarm min/max settings will be less than min/max values for a high resolution stream.

Continuous Recording

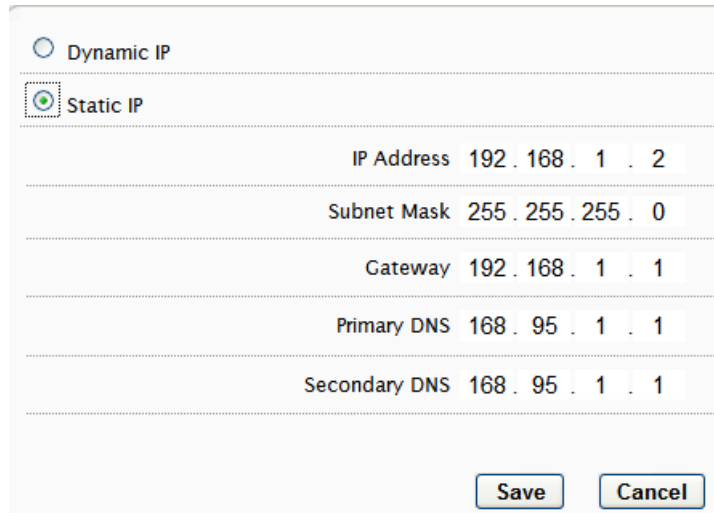
Continuous Recording	
Enable	<input type="checkbox"/>
Stream Source	1 ▾
Recording Storage	SD Card ▾
Maximum file size	100 MB (10 ~ 300)
Recording Schedule	<input type="checkbox"/>

Currently continuous recording only records to SD card. Checking Recording Schedule will display the scheduling settings which can be used to define when continuous recording should occur.

Recording Schedule	<input checked="" type="checkbox"/>
Day of the Week	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat
Time [HH:MM]	From 00:00 To 23:59 <input type="button" value="Full Day"/>

3.7 Network – IP Setting

IP Setting



<input type="radio"/> Dynamic IP
<input checked="" type="radio"/> Static IP
IP Address 192 . 168 . 1 . 2
Subnet Mask 255 . 255 . 255 . 0
Gateway 192 . 168 . 1 . 1
Primary DNS 168 . 95 . 1 . 1
Secondary DNS 168 . 95 . 1 . 1
<input type="button" value="Save"/> <input type="button" value="Cancel"/>

In the IP Setting tab, select DHCP or Static IP for the camera. If using static, then enter the appropriate settings for your environment.

Please confirm all network related settings with the network administrator prior to making any changes.

WLAN Setting

Currently only the EV8180 model has wireless functionality, and only wireless dongle from Etrovision is supported. Other manufacturers' wireless dongles are not guaranteed to work.

The EV8x8x models use a wireless dongle which is different from the EVxx5x models. Verify the appropriate wireless dongle (e.g. AC-WD3110, AC-WD3111) is being used.

In the WLAN setting tab, click the Enable Wi-Fi option to enable WiFi.



<input type="checkbox"/> Enable Wi-Fi	<input checked="" type="radio"/> Auto Scan	<input type="radio"/> Manual
---------------------------------------	--	------------------------------

Any WiFi changes will only be applied after clicking the **Save** button in the IP Setting tab.

(To submit the settings, please use the Save button in "IP Setting" page.)

Auto Scan can be used to scan available networks. An available network can be selected by clicking the option and entering a password if required.

Manual can be used to directly configure WiFi settings.

In the IP Setting tab, set the appropriate IP settings for the wireless network. After clicking **Save**, the camera will reboot with the new wireless settings.

The camera will no longer be accessible via the wired network. Disabling WiFi or removing the WiFi USB antennae will enable the wired network port.

3.8 Network – Streaming

The camera can stream using UDP, TCP or HTTP. The client application connecting to a camera can direct which protocol to use. The method of streaming will likely determine the need and extent of any router configuration that may be required.

URL access name:
rtsp://10.1.21.3/**rtptimeo1.sdp**

Enables username/password requirement
rtsp://**root:pass**@10.1.21.3/rtptimeo1.sdp

Authentication ☐

Access Name **rtptimeo**

RTSP Port **554** ← RTP over RTSP/TCP
If not using default port (554)
then port must be included in URL:
rtsp://10.1.21.3:**555**/rtptimeo1.sdp

Ports used by RTP over UDP

RTP Video Port **6002**

RTCP Video Port **6003**

RTP Audio Port **6004**

RTCP Audio Port **6005**

Limits the number of cuncurrent connections

Audio Post Port **1852** ← Camera audio port to receive audio from PC client (e.g. mic)

Maximum Viewers **10**

Multicasting address

Multicast Streaming ☐ ← To enable multicasting; enables TTL

Group Address **228.67.43.91**

TTL **255** ← Time To Live

The port settings all relate to camera ports. If streaming outside of a LAN (e.g. to the internet), then routers on both the camera and client side need to provide necessary access for these ports.

The camera will stream via HTTP by default, which will use the HTTP port as defined in the System – Generic Settings (80 by default). Streaming via HTTP often requires little or no router configuration.

HTTP Port **80**

If the client application uses RTP over RTSP/TCP, then the camera will stream using the **RTSP Port**, 554 by default.

RTP over UDP will stream using the **RTP Video Port**, starting at 6002 and can increment

Video and audio server ports only need be changed if a network has security or operational restrictions using these ports. In most cases, the RTP/RTCP video and audio should use the default values.

While the RTP/RTCP audio/video ports by default are 6002-6005, this represents the starting point for client connections. If 1 client is connected, then this connection would use 6002-6005, but a 2nd connection would then use 6006-6009. This may require proper router configuration if using the web UI outside of a LAN.

Maximum Viewers refers to concurrent uses. Connections beyond this value will receive an error upon connection.

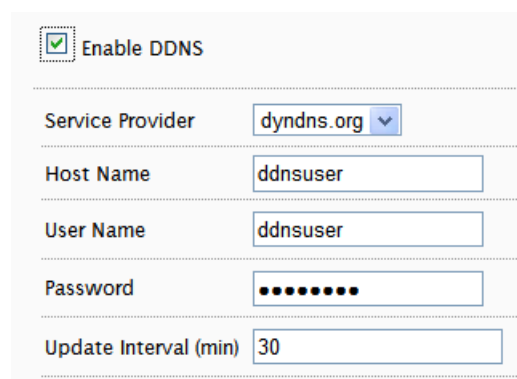
Multicasting allows sending a message or data to a group via a single message. The multicasting parameters are only for configuring a camera to use

multicasting. A networking environment that supports multicasting must be setup which is beyond the scope of this document.

3.9 Network – DDNS

DDNS is used to map a dynamically assigned IP address (a device using DHCP) with a hostname.

NOTE: Certain network configuration will likely be required (i.e. mapping the IP address recognized by the DDNS service to the IP camera) to implement DDNS. Therefore, the network administrator will likely need to be consulted.

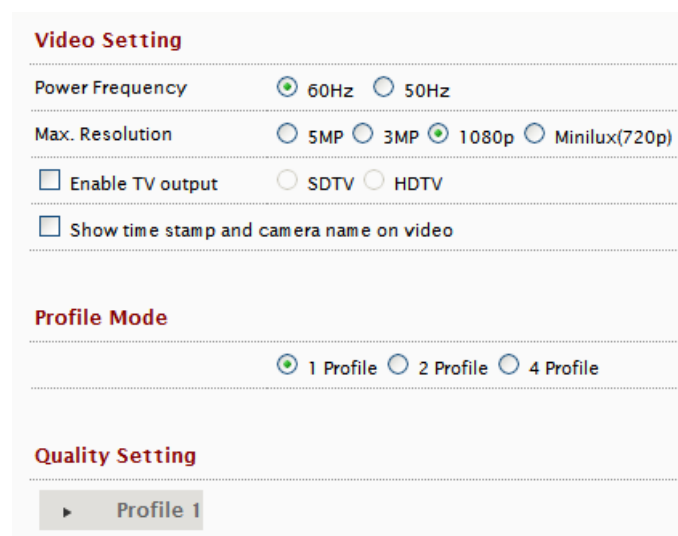


The screenshot shows a configuration form for DDNS. At the top, there is a checkbox labeled "Enable DDNS" which is checked. Below this, there are several input fields: "Service Provider" is a dropdown menu showing "dyndns.org"; "Host Name" is a text box containing "ddnsuser"; "User Name" is a text box containing "ddnsuser"; "Password" is a text box with masked characters (dots); and "Update Interval (min)" is a text box containing "30".

If the IP camera uses DHCP, a DDNS service can provide a hostname for use with the IP camera.

Registration with one of the DDNS service providers (ddns.nu, dyndns.org) is required for use of this feature.

3.10 Video/Audio – Video Setting



The screenshot shows the "Video Setting" interface. It has three main sections: "Video Setting", "Profile Mode", and "Quality Setting". In the "Video Setting" section, "Power Frequency" has radio buttons for 60Hz (selected) and 50Hz; "Max. Resolution" has radio buttons for 5MP, 3MP, 1080p (selected), and Minilux(720p); there are checkboxes for "Enable TV output" and "Show time stamp and camera name on video"; and radio buttons for "SDTV" and "HDTV". The "Profile Mode" section has radio buttons for "1 Profile" (selected), "2 Profile", and "4 Profile". The "Quality Setting" section has a button labeled "Profile 1".

Deflicker can be adjusted if flickering is present due to artificial lighting. This setting should be set to match the utility frequency for a given country.

TV Output

TV Output can be enabled with SDTV or HDTV options available.

- SDTV = CVBS output
- HDTV = YPbPr output

When **TV Output** has been enabled, 2 video profiles will be enabled. Profile 2 will change to settings which will be used for the video out display (e.g. D1 resolution).

Profile 2	
Encode Type	<input checked="" type="radio"/> H.264 <input type="radio"/> MPEG4 <input type="radio"/> MJPEG
Resolution	736x480
Preferred Bitrate / Frame Rate	
Bitrate Control	CBR
Max Bitrate	256K
Max Frame Rate	20fps
GOP	4X

Profile 1 settings will not be modified.

Resolution Mode (EV8x80F Models Only)

For the F model series, Resolution Mode provides a variety of resolution formats.

Resolution Mode	<input checked="" type="radio"/> 5M <input type="radio"/> 3M <input type="radio"/> Full HD(1080p) <input type="radio"/> Minilux(720p)
-----------------	---

5M will change Stream 1 to 5M (2592x1920) with a maximum 10fps for both Stream 1 and 2.

The 5M option limits ROI to 2, and recording via the camera (e.g. SD card) is disabled.

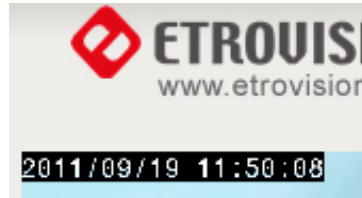
Minilux mode uses noise cancelation technology to provide clearer image quality in low lux conditions.

Time Stamp & Camera Name

When enabled:

<input checked="" type="checkbox"/> Show time stamp and camera name on video
--

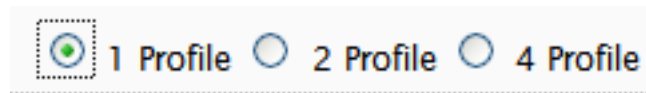
The video will also display the time stamp and camera name.



Profile Setting

The Video Profile Settings control the ROI (Region of Interest) characteristics. The ROI video is streamed via RTSP protocol. See the “Streaming ROI” section for more on viewing ROI video.

The number of available ROI profiles for viewing can be set by selecting the appropriate option button.



4 Profile defines each stream with a VGA resolution (640x480), while **1 Profile** and **2 Profile** settings provide some options for resolution.

Setting for specific ROI profiles can be found in the Video Quality Setting section.

 The image shows the 'Profile 1' settings form. It includes the following fields:

- Encode Type: ☒ H.264, ☐ MPEG4, ☐ MJPEG
- Resolution: 1920x1080 (dropdown)
- Preferred Bitrate / Frame Rate section:
 - Bitrate Control: CBR (dropdown)
 - Max Bitrate: 6M (dropdown)
 - Max Frame Rate: 30fps (dropdown)
 - GOP: 1X (dropdown)

ROI profile 1 & 2 are preconfigured profiles which have some settings that are configurable (e.g. FPS).

All profiles offer Constant Bit Rate (CBR) or Variable Bit Rate (VBR) mode.

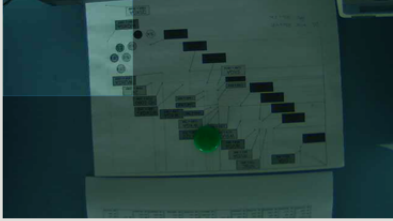
The GOP (Group Of Pictures) can also be adjusted. The GOP is based on the FPS setting. For example, if the FPS is 20 and the GOP setting is 2, then the GOP is 40 frames. A GOP is comprised of one I frame and the remainder are P frames.

4 Profile defines each stream with a VGA resolution (640x480).

▼ Profile 3

Encode Type ☒ H.264 ☐ MPEG4 ☐ MJPEG

Region Size



X-axis Y-axis Width Height

Preferred Bitrate / Frame Rate

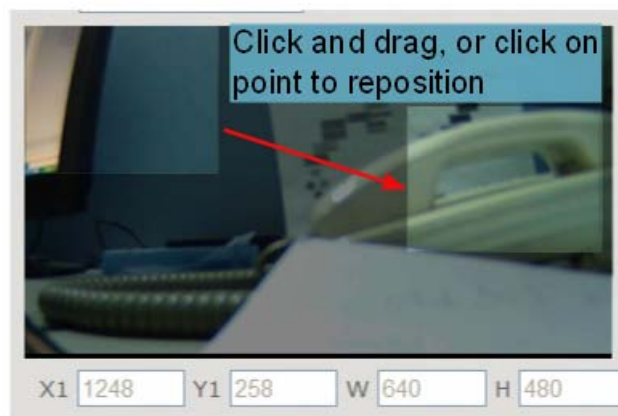
Bitrate Control

Max Bitrate

Max Frame Rate

In the Region Size settings, the image has a mask covering area that will not be displayed; the lighter shaded area will be what is displayed for the ROI.

To adjust the ROI, click & drag the window or click within the masked area to reposition.



3.11 Video/Audio – Audio Setting

Encode Type

Bitrate

Line-In Gain

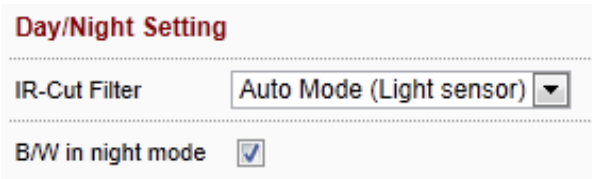
Line-Out Gain

Select the desired audio codec. The **Bitrate** is configurable for some codecs.

3.12 Video/Audio – Color Setting

Day/Night Setting

Day & Night setting configuration options are available.



Day/Night Setting

IR-Cut Filter Auto Mode (Light sensor) ▼

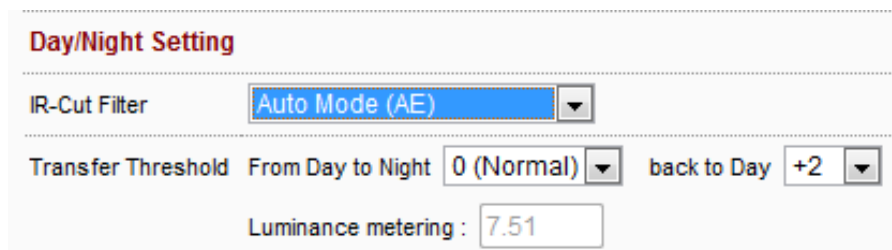
B/W in night mode ☒

- IR-Cut Filter: controls IR filter operation
- B/W in night mode: deselect if black & white not desired in night mode

IR-Cut Filter

The IR-Cut Filter has a several settings, and most are self explanatory.

The Auto Mode (AE) allows adjusting the light sensor's sensitivity to day/ night conditions to fine tune the IR cut filter operation when the Auto Mode (Light Sensor) isn't optimal for a specific environment.



Day/Night Setting

IR-Cut Filter Auto Mode (AE) ▼

Transfer Threshold From Day to Night 0 (Normal) ▼ back to Day +2 ▼

Luminance metering : 7.51

In Transfer Threshold are 2 settings: **From Day to Night** and **Back to Day**.

From Day to Night has a range (+10 Bright to -10 Dark) which can be used to adjust the sensitivity of switching from day to night. A larger **From Day to Night** value will result in a switching to Night mode in lighter conditions, a lower value requires darker conditions to switch.

Back to Day also provides a range (+2-+12) which adjusts the sensitivity of the switch from night to day. This value relates to the **From Day to Night**; the switch to day mode is based on the **From Day to Night** + **Back to Day** values.

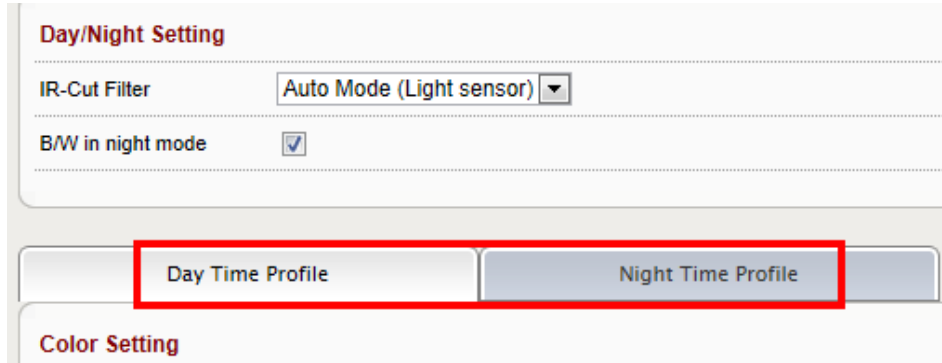
NOTE: Auto Mode (AE) doesn't differentiate between IR light and visible light. Subsequently, IR light can cause the IR-Cut filter to switch back to Day mode.

While in night mode, if an object is close the image will appear bright from the IR light and result in the **Luminance Metering** to register a high value which can switch the camera back to Day mode. This is due to **Auto Mode (AE)** using image brightness.

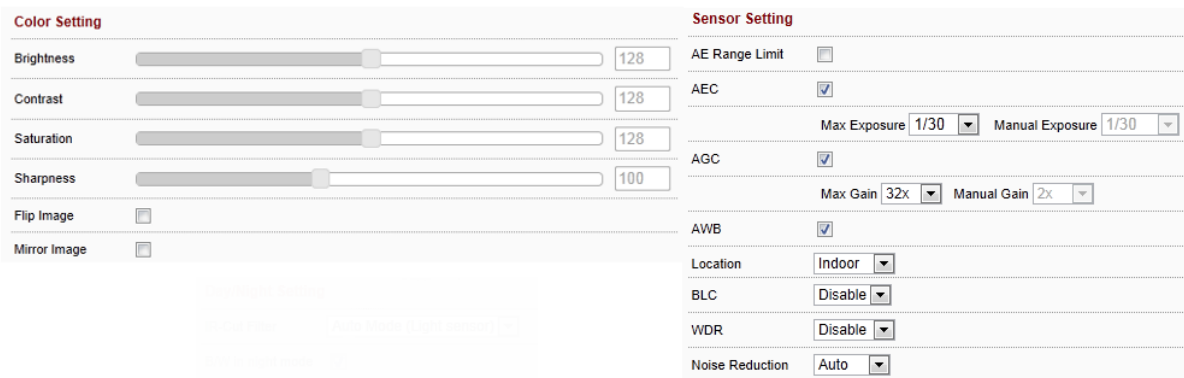
So, the camera shouldn't use this setting in environments where objects are close creating a "bright" image. Alternatively, set the **Back to Day** to a high value to counteract this behavior.

Color & Sensor Settings

Image settings for both day and night are available via the Day & Night Time Profile tabs. The relevant settings will be applied to the camera based on the camera's present mode of operation (e.g. day or night).



Color and sensor settings are as follows:



- Brightness
- Contrast
- Saturation
- Sharpness
- Flip: flip horizontally (top to bottom)
- Mirror: flip vertically (right to left)
- AE Range Limit: enabling exposes an upper/lower limit list of exposure values for configuration
Enabling also disables AEC & AGC settings and hides the setting controls
- AEC: Automatic Exposure Control; disabling enables Manual Exposure
Max Exposure: maximum possible exposure time
Manual Exposure: sets specific exposure time
- AGC: Automatic Gain Control; disabling enables Manual Gain
Max Gain: maximum possible gain
Manual Gain: sets specific gain setting
- AWB: Auto White Balance
- Location: indoor/outdoor setting to provide more accurate exposure for an indoor or outdoor environment

- BLC: Back Light Compensation; image EV (Exposure Value) can be increased to compensate for background lighting
- WDR: Wide Dynamic Range; used for high contrast lighting; some camera models only have Medium and High setting
- Noise Reduction: image noise compensation; manual allows user to define level of noise reduction (0 none; 255 max).
While noise reduction will smooth pixilation (usually in dark areas), too much may result in blurring.

3.13 Video/Audio – Text Overlay

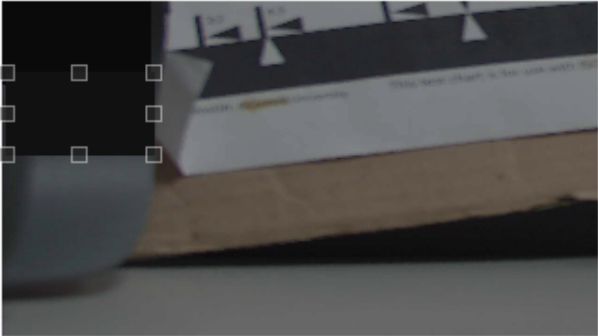
Timestamp Format
YYYY-MM-DD HR:MIN:SEC

☐ Attach camera name to the caption

The video display format can be changed by selecting one of the available timestamp formats and enabling display of the camera name.

3.14 Video/Audio – Privacy Mask

Privacy mask can be used to block out areas from view and triggering motion detection. Up to 5 privacy masks can be applied; each mask can be 80 x 45 in size.

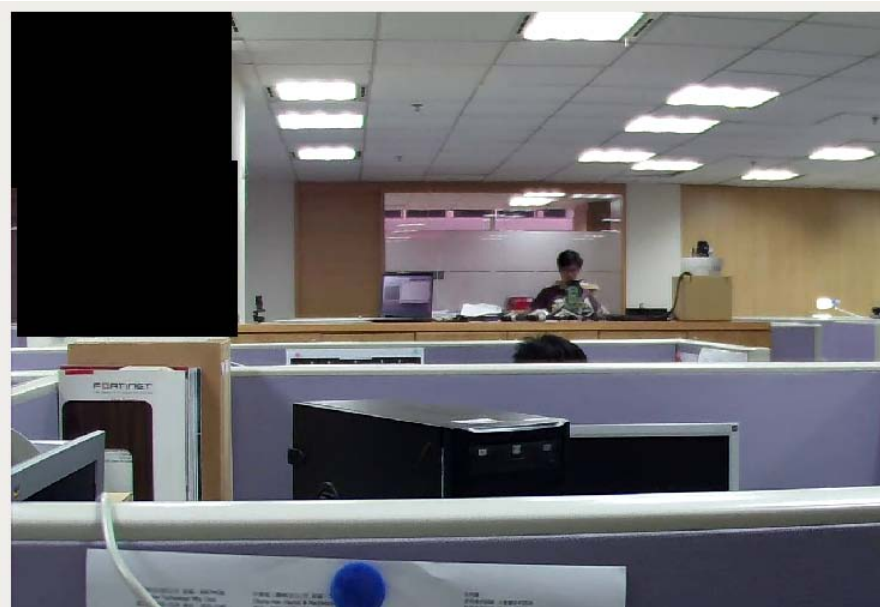


Color of Mask
Black

<input checked="" type="checkbox"/> Mask Window 1	<input type="radio"/> Draw	X 0	Y 0	W 80	H 45
<input checked="" type="checkbox"/> Mask Window 2	<input checked="" type="radio"/> Draw	X 2	Y 38	W 80	H 45
<input type="checkbox"/> Mask Window 3	<input type="radio"/> Draw	X 63	Y 0	W 80	H 45
<input type="checkbox"/> Mask Window 4	<input type="radio"/> Draw	X 70	Y 39	W 80	H 45
<input type="checkbox"/> Mask Window 5	<input type="radio"/> Draw	X 0	Y 0	W 0	H 0

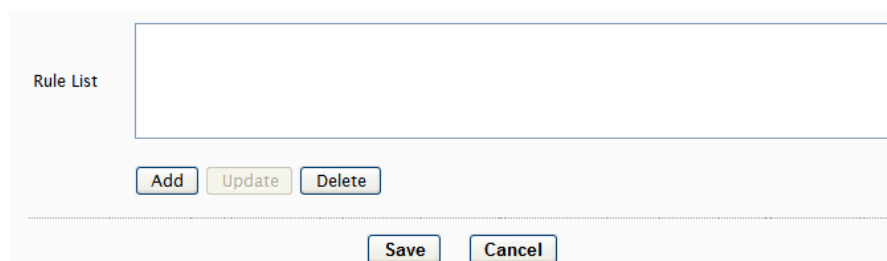
Check the box to the left to enable, then click **Draw** to set the mask area. The area handles can be used to adjust the size or move the mouse over the area and click/drag to move the mask.

The masked area will be blocked from the image (and motion detection) with the color set in **Color of Mask** (black by default).



3.15 Event Handle – Event Rule

The Event Rule page is used to define actions (e.g. record to SD card) in response to the triggering of an event (e.g. motion detection).



The Add/Update rule screens contain the same fields.

Rule Name is a user defined name for a user defined trigger/action. A trigger or action may require additional settings (e.g. motion detection area).

Rule Name	<input type="text"/>	
Trigger Type	<div> <div>Motion Detection</div> <div>Digital Input</div> <div>Network Loss</div> <div>Periodical Timer</div> </div>	
Detect Area	<input type="checkbox"/> Area 1 <input type="checkbox"/> Area 2 <input type="checkbox"/> Area 3	
Period Time	<input type="text" value="1"/> secs	
Action	<div> <div>Digital Output</div> <div>Email</div> <div>Record</div> </div>	<div> <div>[Email Setting]</div> <div>Recipient email address:</div> <div>jd@abc.com</div> </div>

Period Time is a time interval during which an event can not be triggered. For example, if **Period Time** is set to 60, then after a specific event is triggered (e.g. motion detection), that event can only be triggered after 60 seconds.

This applies only to a user-defined event. If 2 motion detection events have been configured (e.g. MD1 and MD2), then if MD1 is triggered, MD2 can still be triggered regardless of MD1's Period Time setting.

Be sure to click **SAVE** in the main Event Rule screen to save any changes.

3.16 Event Handle – Event Server

The Event Server page has configuration options for event notification via email and event driven video/images to network storage.

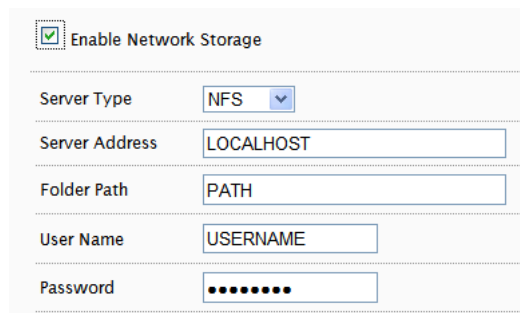
Email Setting

<input checked="" type="checkbox"/> Primary Email Server	
Server Address	<input type="text" value="smtp.mymail.com"/>
Server Port	<input type="text" value="25"/>
Require Authentication	<input type="checkbox"/>
User name	<input type="text" value="username"/>
Password	<input type="password" value="••••••••"/>
Sender email address	<input type="text" value="user@smtp.mymail.com"/>
Recipient email address	<input type="text" value="user@smtp.mymail.com"/>
Connection Timeout (sec)	<input type="text" value="5"/>
require SSL connection	<input type="checkbox"/>

Enter the SMTP server for Server Address and all additional relevant details.

The username may only contain alphanumeric characters and the underscore character, “_”.

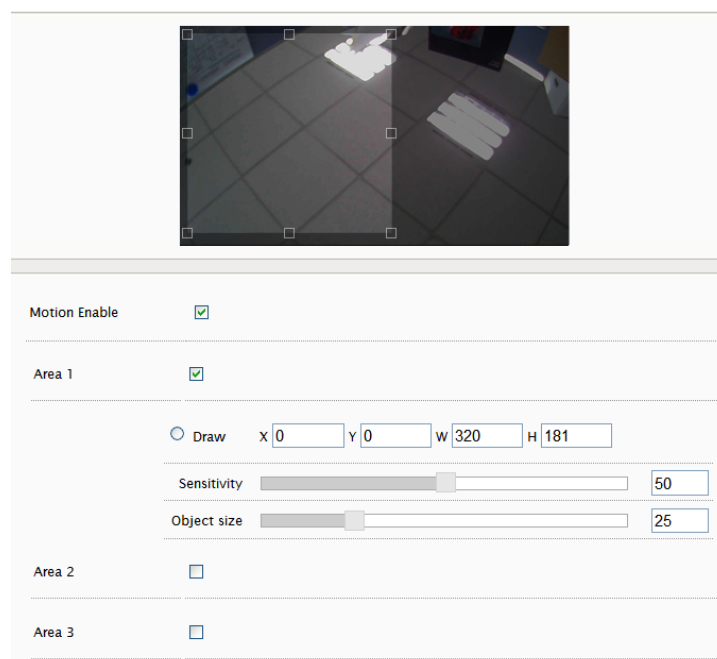
Network Storage

A screenshot of a web-based configuration interface for network storage. At the top, there is a checkbox labeled "Enable Network Storage" which is checked. Below this, there are several input fields: "Server Type" is a dropdown menu set to "NFS"; "Server Address" is a text box containing "LOCALHOST"; "Folder Path" is a text box containing "PATH"; "User Name" is a text box containing "USERNAME"; and "Password" is a text box with masked characters (dots).

NFS and Samba are supported; if enabled then input relevant details.

3.17 Event Handle – Motion Detection

To use motion detection, motion detection should be enabled and at least one motion detection area enabled. Checking the box for an Area (e.g. Area 1) enables it.

A screenshot of a web-based configuration interface for motion detection. At the top, there is a video feed showing a tiled floor with a light-colored rectangular area highlighted. Below the video, there is a section for "Motion Enable" with a checked checkbox. Underneath, there are three sections for "Area 1", "Area 2", and "Area 3". "Area 1" has a checked checkbox and a "Draw" button. Below the "Draw" button, there are input fields for "x" (0), "y" (0), "w" (320), and "h" (181). Below these fields are two sliders: "Sensitivity" (set to 50) and "Object size" (set to 25). "Area 2" and "Area 3" each have an unchecked checkbox.

To modify a Detect Area, select “Draw” and click & drag to resize the detection area (light area) . X=horizontal, Y=vertical, W=width, H=height.

3.18 PTZ Control – Serial Setting

PTZ settings can be applied if the camera will interact with a PTZ device.

PTZ Protocol	none ▼
Device ID	1
Baud Rate	9600 ▼
Data Bits	8 ▼
Parity Bit	none ▼
Stop Bits	1 ▼
Communication Mode	RS485 ▼

Pelco P and D and transparent protocols are supported as well as RS-485 and RS-422 communication modes.

Please refer to the PTZ device's required settings to configure the web UI PTZ settings.

3.19 System Log – View Log

The System Log displays system and event details.

System Log		Event Log	
Jan	1 00:00:12	syslogd 1.5.2: restart (remote reception).	
Jan	1 00:00:14	ips_sysmgr[700]: v0.2.0 (Fri Apr 15 18:16:30 CST 2011) executable binary	
Jan	1 00:00:14	ips_sysmgr[700]: service <0:svConfigMgr> created successfully.	
Jan	1 00:00:14	ips_sysmgr[700]: service <1:svEvtListen> created successfully.	
Jan	1 00:00:14	ips_sysmgr[700]: service <2:svRomHost> created successfully.	
Jan	1 00:00:14	ips_sysmgr[700]: success to connect the Event Handler.	
Jan	1 00:00:14	ips_sysmgr[700]: service <3:svAudioSrc> created successfully.	
Jan	1 00:00:14	ips_sysmgr[700]: service <4:svDdnsClient> created successfully.	
Jan	1 00:00:14	ips_sysmgr[700]: service <5:svEventInput> created successfully.	
Jan	1 00:00:14	ips_sysmgr[700]: service <6:svLedCtrl> created successfully.	
Jan	1 00:00:14	ips_sysmgr[700]: switching audio input to mic-in.	
Jan	1 00:00:14	ips_sysmgr[700]: setup the LEDs state.	
Jan	1 00:00:14	ips_sysmgr[700]: Setting event input successfully	

The System Log has information specifically related to basic system messages (e.g. startup, shutdown) while the Event Log contains information related to events triggered.

3.20 System Log – Remote Log Setting

The System and/or Event log data can also be remotely logged. Check the box to enable and provide the corresponding log server address.

System Log	<input type="checkbox"/> Enable	Server IP address	192.168.0.2
Event Log	<input type="checkbox"/> Enable	Server IP address	192.168.0.2

4 STREAMING VIDEO

4.1 RTSP Streaming

Video can be streamed to a video player (e.g. VLC) via RTSP protocol using the standard RTSP port number 554.

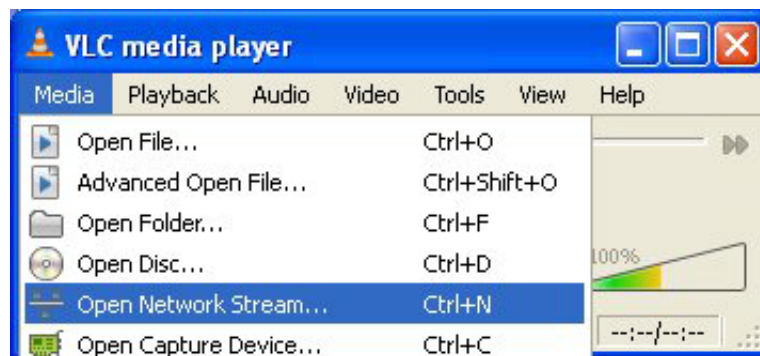
The URL is in the following format:

rtsp://[IP ADDRESS]/rtppvideo[1-4].sdp

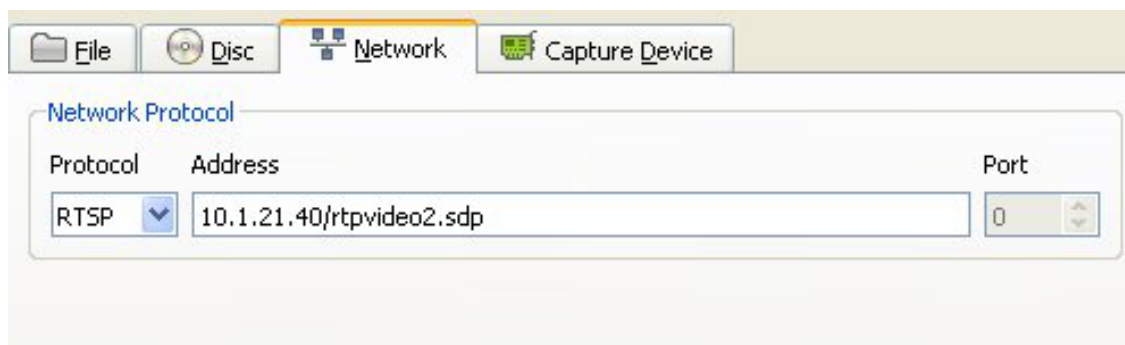
Replace with the appropriate IP address.

rtppvideo1-4 represent video profiles with different characteristics. For more information on video profiles, see Video/Audio – Video Setting”.

Using VLC for example, select **Media** from the menu bar and **Open Network Stream**.



Next specify IP address of the camera and stream profile.



Click **Play** and video will begin streaming in the video player.

WARNING: firewalls and other network security may prevent video streaming.

Authentication

If Streaming authentication has been enabled in Network -> Streaming

Then a username/password must be supplied with the RTSP URL

rtsp://**USERNAME:PASSWORD**@[IP ADDRESS]/rtppvideo[1-4].sdp

Network Protocol

Please enter a network URL:

rtsp://root:pass@10.1.21.56/rtpvideo1.sdp|

4.2 Image Snapshot in a Browser

To view an image snapshot in a browser, the jpeg.cgi call will provide a snapshot based on video profile 1.

http://<IP ADDRESS>/config/jpeg.cgi

5 ROUTER/FIREWALL CONFIGURATION

NOTE: Router/Firewall functionality and operation depends on the make/model, firmware, etc. The following screen shots related to router/firewall configuration are only for reference; functionality and operation may differ from your equipment. Please refer to your router/firewall documentation for additional information on functionality and operation.

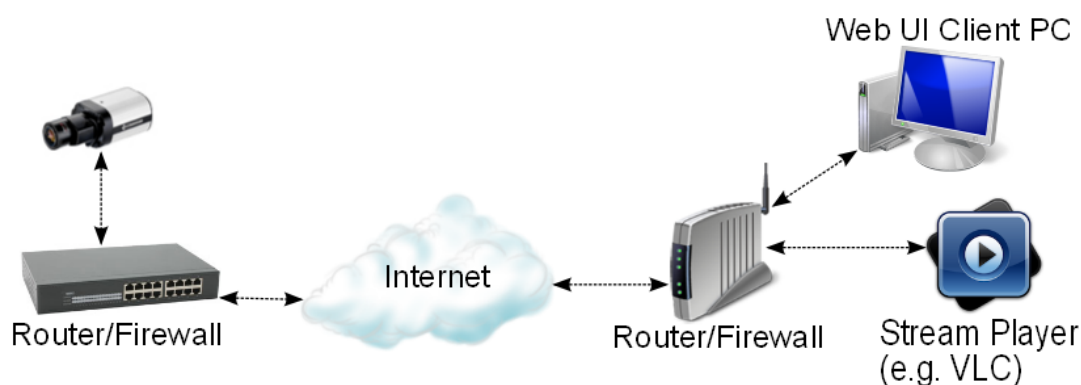
The following assumes the use of the camera's default Network/Streaming settings. If any changes were made to the default settings (e.g. RTSP Port), then please account for these in the router/firewall configuration.

For more information on the streaming port settings, refer to section **3.8 Network – Streaming** and **3.2 System – Generic Setting** for the HTTP port.

Authentication	<input type="checkbox"/>
Access Name	rtptimeo
RTSP Port	554
RTP Video Port	6002
RTCP Video Port	6003
RTP Audio Port	6004
RTCP Audio Port	6005
Audio Post Port	1852
Maximum Viewers	10
Multicast Streaming	<input type="checkbox"/>
Group Address	228.67.43.91
TTL	255

5.1 Streaming Router Configuration

If a PC will access the web UI or stream camera video from the WAN/Internet, then additional configuration is required on the client router/firewall.



Camera Router/Firewall

The camera's router/firewall may require opening (assuming default camera settings). The following highlights those ports that require configuration for a specific streaming method.

Clients only requiring streaming via HTTP

- Web port 80/TCP – Also required if camera web UI access needed

Clients only streaming RTP over RTSP/TCP

- RTSP port 554/TCP

Clients only streaming using RTP over UDP

- RTSP ports 6000+ (port usage starts in low 6000 and depends on number of connections – 6000-7000 could be specified)

Sample router screenshots enabling port 80 and 554 for streaming. This would be used if clients stream either via HTTP or RTP over RTSP/TCP.

NAT >> Port Redirection

Port Redirection					Set to Factory Default	
Index	Service Name	Public Port	Private IP	Status		
1.	camera RTP port 554	554	192.168.1.10	v		
2.	camera web port 80	80	192.168.1.10	v		
3.				x		

Index No. 2

☒ Enable

Mode

Single

Service Name

camera web port 80

Protocol

TCP

WAN IP

All

Public Port

80

Private IP

192.168.1.10

Private Port

80

NAT >> Port Redirection

Index No. 1

☒ Enable

Mode

Single

Service Name

camera RTP port 554

Protocol

TCP

WAN IP

All

Public Port

554

Private IP

192.168.1.10

Private Port

554

The firewall/DoS settings may also require some modification. The following shows a change made to facilitate streaming.

Firewall >> General Setup

General Setup

Call Filter	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	Start Filter Set	Set#1 ▼
Data Filter	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	Start Filter Set	Set#2 ▼
Actions for default rule:			
Application	Action/Profile	Syslog	
Filter	Pass ▼	<input type="checkbox"/>	
IM/P2P Filter	None ▼	<input type="checkbox"/>	
<input type="checkbox"/> Apply IP filter to VPN incoming packets			
<input checked="" type="checkbox"/> <u>Accept large incoming fragmented UDP or ICMP packets (for some games, ex. CS)</u>			

Client Router/Firewall

A client PC or application may require router configuration as well. Although this usually isn't required for HTTP or RTP over TCP, this will often be required when streaming via UDP.

There are 2 ways to handle this situation:

- Place the PC in the DMZ
- Open UDP traffic for port 1-65535

DMZ

An example of the DMZ host setup.

NAT >> DMZ Host Setup

DMZ Host Setup

WAN 1	
Private IP ▼	
Private IP	192.168.1.20 Choose PC
MAC Address of the True IP DMZ Host	00 . 00 . 00 . 00 . 00 . 00
Note: When a True-IP DMZ host is turned on, it will force the router's WAN connection to be always on.	
WAN 2	
Enable <input type="checkbox"/>	Private IP <input type="text"/> Choose PC

Open UDP Port

Opening ports 1-65535 allows full web UI access.

NAT >> Open Ports

Open Ports Setup					Set to Factory Default
Index	Comment	WAN Interface	Local IP Address	Status	
1.	client UDP port setting	WAN1	192.168.1.9	v	

NAT >> Open Ports >> Edit Open Ports

Index No. 1

<input checked="" type="checkbox"/> Enable Open Ports							
Comment	client UDP port setting						
WAN Interface	WAN1						
Local Computer	192.168.1.9				Choose PC		
	Protocol	Start Port	End Port		Protocol	Start Port	End Port
1.	UDP	1	65535	6.	----	0	0
2.	----	0	0	7.	----	0	0

Firewall/Security Settings

The router firewall/security settings may need adjusting to permit access. PC firewall or virus scan software may also affect streaming.

Below is an example of DoS settings; note some access is provided for permitting access.

Firewall >> DoS defense Setup

DoS defense Setup

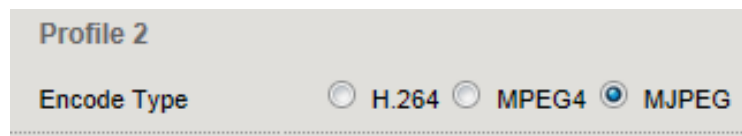
<input checked="" type="checkbox"/> Enable DoS Defense	Select All		
<input checked="" type="checkbox"/> Enable SYN flood defense	Threshold	50	packets / sec
	Timeout	10	sec
<input type="checkbox"/> Enable UDP flood defense	Threshold	150	packets / sec
	Timeout	10	sec
<input checked="" type="checkbox"/> Enable ICMP flood defense	Threshold	50	packets / sec
	Timeout	10	sec
<input type="checkbox"/> Enable Port Scan detection	Threshold	150	packets / sec
<input checked="" type="checkbox"/> Block IP options	<input checked="" type="checkbox"/> Block TCP flag scan		
<input checked="" type="checkbox"/> Block Land	<input checked="" type="checkbox"/> Block Tear Drop		
<input checked="" type="checkbox"/> Block Smurf	<input checked="" type="checkbox"/> Block Ping of Death		
<input checked="" type="checkbox"/> Block trace route	<input checked="" type="checkbox"/> Block ICMP fragment		
<input checked="" type="checkbox"/> Block SYN fragment	<input type="checkbox"/> Block UnknownProtocol		
<input checked="" type="checkbox"/> Block Fraggle Attack			

6 MOTION JPEG IN A BROWSER

Basic streaming from the camera to a browser can be done using the mjpg.cgi call.

Microsoft IE is not support for this function. IE doesn't support the server-push implementation, so Firefox is recommended for use with mjpg.cgi. Other browsers (e.g. Chrome) may also work.

First, configure the target video stream profile to use MJPEG encoding type. If multiple video profiles use MJPEG, then the **profile** parameter should also be included; this is discussed below.



In the browser enter the mjpg.cgi call. Substitute the camera IP/URL for <IP ADDRESS>:

http://<IP ADDRESS>/stream/mjpg.cgi

The user will be challenged for a username and password; this is required and can't be disabled.

The username/password can be included with the URL avoiding the username/password pop-up window. Use the following format (substitute root:pass with appropriate username:password):

http://**root:pass**@<IP ADDRESS>/stream/mjpg.cgi

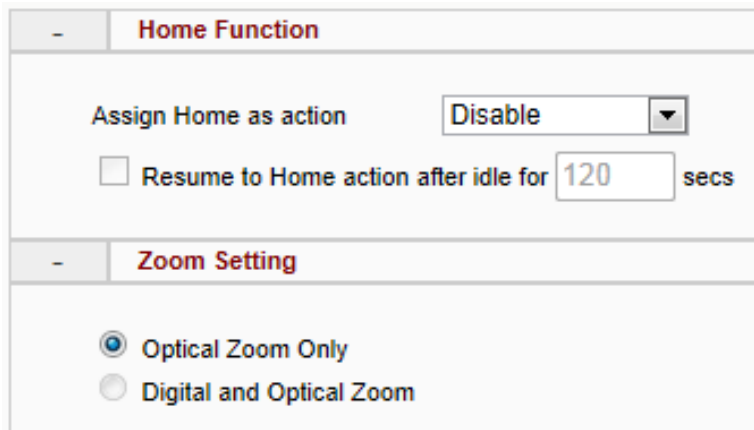
If multiple profiles are using MJPEG codec, then the **profile=n** parameter should be included to specify which video stream profile to use. Substitute the stream profile number (e.g. profile=2 for camera video profile 2) for n:

http://<IP ADDRESS>/stream/mjpg.cgi?**profile=n**

7 EV8280 PTZ CONTROL SETTINGS

The EV8280 is a speed dome camera with built-in PTZ functionality. The PTZ Control settings in the EV8280 cater to the specific functionality available in this model.

7.1 PTZ Control – General Setting



Home Function

Assign Home as action Disable

☐ Resume to Home action after idle for 120 secs

Zoom Setting

☒ Optical Zoom Only

☐ Digital and Optical Zoom

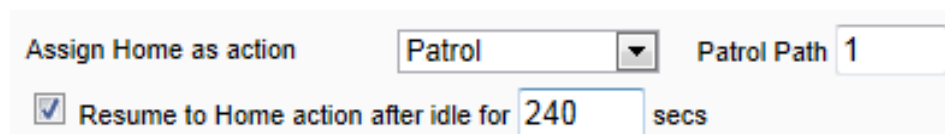
Home Function

Home Function can define a PTZ function to be executed when the Home button in the Live View's PTZ Control panel is clicked.



Patrol, **Auto Scan** and **Go Preset Point** can all be configured to start upon clicking the Home button.

In addition, the defined Home Function can also be configured to run automatically if no user interaction has occurred for a specified amount of time. To enable click the check box and change the idle time if desired.



Assign Home as action Patrol Patrol Path 1

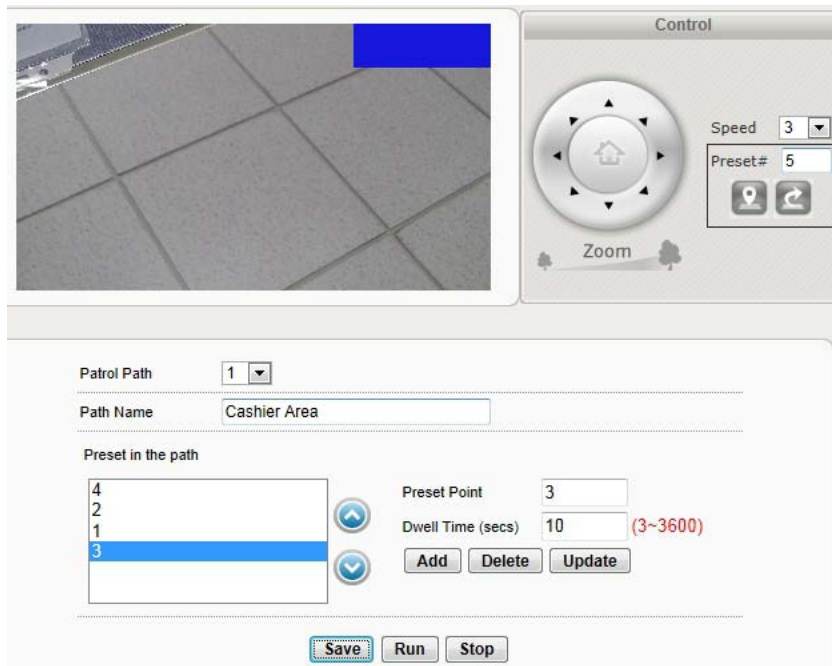
☒ Resume to Home action after idle for 240 secs

Zoom Setting

Currently only the Optical Zoom Only option is available.

7.2 PTZ Control – Patrol Setting

Patrol can be used to automatically move from point to point. Up to 24 patrol paths can be configured.



A preview window and PTZ Control panel are present in the top portion of the page. The PTZ Control panel has the same functionality as in the Live View.



Up to 24 patrol paths can be configured

Use to change the sequence of presets

Use Run & Stop to view in the Patrol Setting viewing window

A patrol path is comprised of several preset points. Enter a predefined preset point and the dwell time (duration at the specified point), then click **Add**.

To **Delete** or **Update** a preset point, first highlight the preset point in the **Preset in the path** pane.

7.3 PTZ Control – Auto Scan Setting

Auto Scan will pan along an axis. The scan can rotate 360° or pan between 2 points.




The top of the page includes a preview window as well as **Tilt** and **Zoom** controls. The arrows at the bottom of the preview window can be used for viewing or setting left/right boundaries.

If the **360-degree Circular Scan** is checked, then the remaining settings related to the boundary scan will be disabled. **Scan speed** can be adjusted as needed.

To configure the angle scan, move the camera to the desired left/right boundary. This can be done using the directional arrows in the preview window or using the **Go Preset** button for a predefined point. Click the **Set Left/Right Boundary** button to define the left/right boundary.

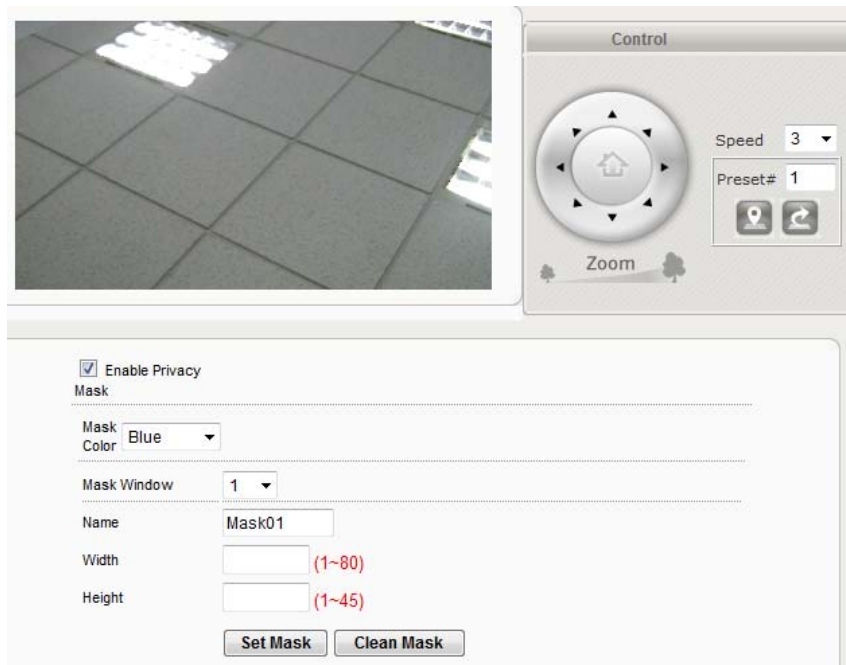
The **Go to Left/Right Boundary** will move the camera to the left/right boundary if defined.

The  button will swap the left & right boundary. The left boundary becomes the right boundary, and vice versa.

The **Run** button can be used to preview the Auto Scan.

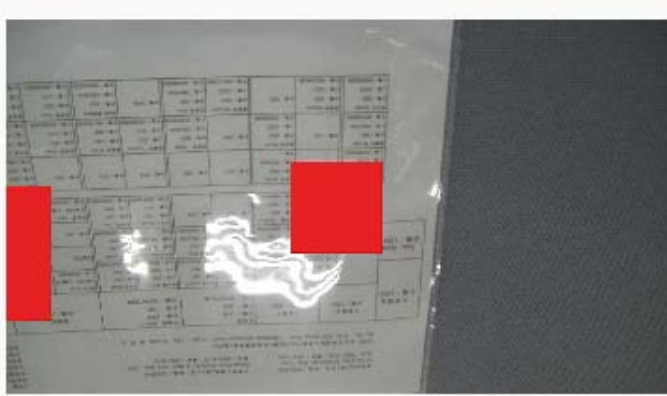
7.4 PTZ Control – Privacy Mask Setting

A privacy mask can be applied to regions to hide areas from viewing and triggering motion detection.



A preview window and PTZ Control panel are present in the top portion of the page. The PTZ Control panel has the same functionality as in the Live View.





☒ Enable Privacy

Mask

Mask Color Red

Mask Window 2

Name Mask02

Width 10 (1~80)

Height 10 (1~45)

Set Mask Clean Mask

Up to 24 Mask Windows can be configured. Each can be given a name (default is MaskXX), and a **Width** and **Height** are required.

Set Mask is used to save the mask window; the mask will automatically be centered in the preview window. There currently is no way to move the mask within the preview window, so the area to mask should be centered in the preview window.

Clean Mask will remove the mask that is currently selected. **Mask Color** is applied to all mask windows.

8 ADDING A CAMERA TO AN NVR

The following gives some basic guidance for adding EV8x8x cameras to an NVR system that supports RTSP streaming. Please refer to the NVR instructions for specific details on how to add and administer cameras for the NVR system.

When adding a camera to an NVR, the NVR will likely require 3 configuration parameters from the camera:

- An RTSP URL
- An HTTP Port Number
- The administrator username and password

8.1 RTSP URL

The RTSP URL will likely be the Profile 1 stream from the camera which by default will be in the following format:

rtsp://[**IP ADDRESS**]/rtpvideo1.sdp

This assumes that the default port, 554, is being used, the “rtpvideo” access name is defined, and camera profile stream 1 is being used.

Below is the Stream Setting page which defines the RTSP port and the Access Name.

If the Access Name and/or RTSP Port have been changed, then specify the RTSP URL in the following format:

rtsp://[**IP ADDRESS**]:[**PORT#**]/[**ACCESSNAME**]1.sdp

If “rtpvideo” was changed to “ev”: rtsp://10.1.21.138:555/ev1.sdp

The camera can be configured with multiple independent streams. The Video Settings page lists information related to the different profile streams.

To assign a specific profile stream to the NVR, then append the appropriate profile number to the access name:

rtsp://[**IP ADDRESS**]/[**ACCESSNAME**][**PROFILE#**].sdp

example: rtsp://10.1.21.38/rtpvideo3.sdp

8.2 Administrator User & Password

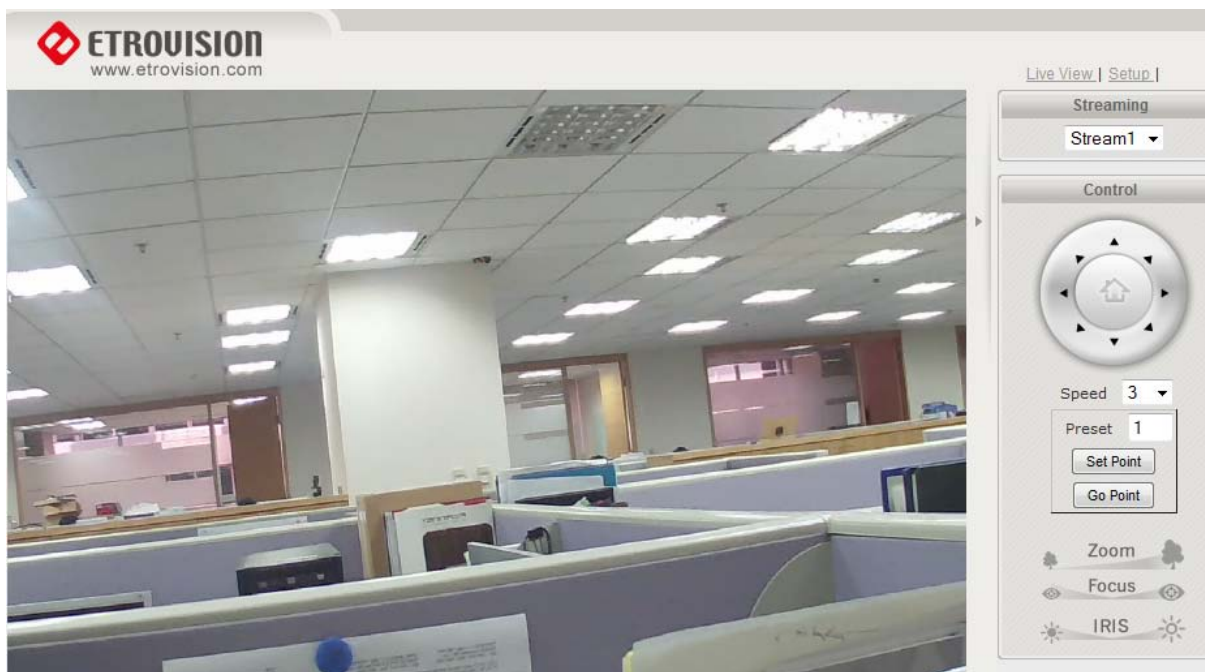
The administrator username is “root” and the default password is “pass”.

9 FIREFOX

While there is support for Firefox, the Live View interface will not have many of the controls available in IE. These controls are implemented using ActiveX which is only supported by IE.

QuickTime player also is required to view video in Firefox. Installing QuickTime on a PC will provide the necessary plugin for Firefox.

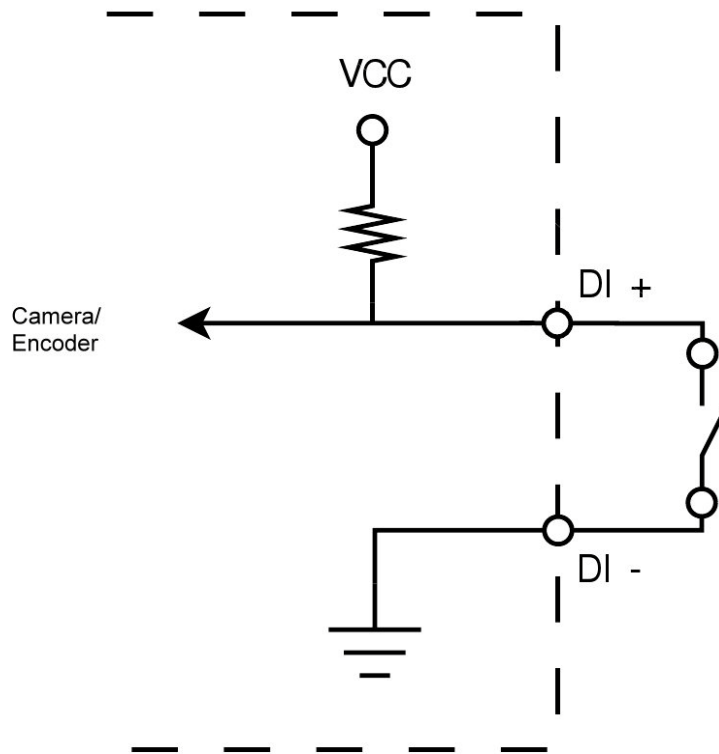
Using Firefox/QuickTime plugin will result in a lag of a few seconds. This is due to QuickTime, and not a problem with the camera's streaming capability.



10 DIGITAL INPUT/OUTPUT

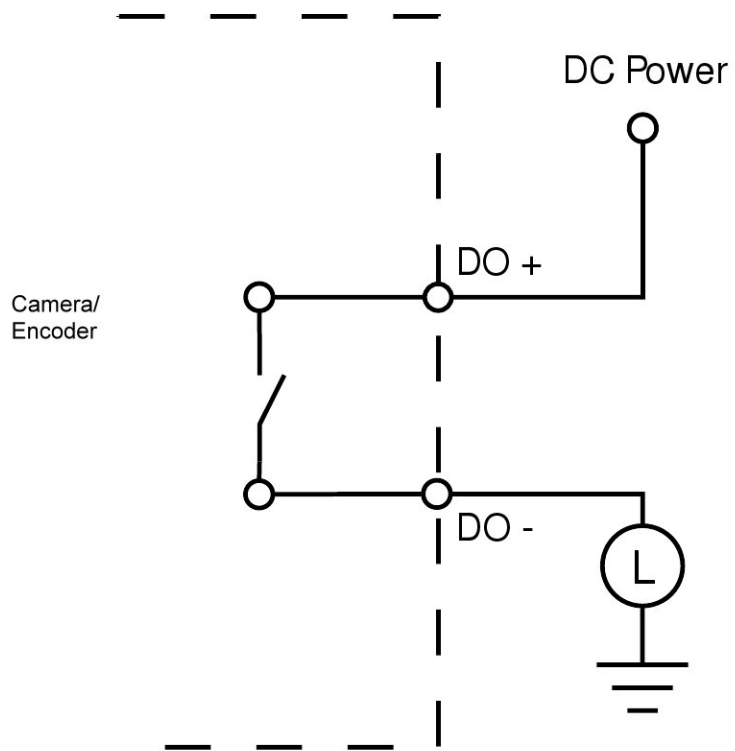
The following provides additional electrical schema and specification information.

10.1 Digital Input



- Ambient Temperature: 25° C
- TTL signal only
- External voltage source: 3-5Vdc $\pm 10\%$
- TTL signal high/low level: 3.3V
- Max. current: 20mA

10.2 Digital Output



- Ambient temperature: 25° C
- External power input: $\leq 12\text{Vdc}$
- Continuous load current: 100mA
- Peak load current: 240mA (100ms / 1 shot)

11 DOCUMENT CHANGE LOG

The following highlight modifications since the previous document version.

11.1 Document Version A

- Modified: 2 Live View
Changed Live View image
- Modified: 2.2 Controls & Status
Added EV8280 DI alert
- Modified: 2.7 Control (PTZ Control)
Changed PTZ control panel image
Added EV8280 PTZ Control layout
- Modified: 3 Setup
Added new System Information screen shots for latest firmware version
- Modified: 3.12 Video/ Audio – Color Setting
Changed for new layout based on Day & Night profiles
- Added: 3.14 Video/ Audio – Privacy Mask
Added new section; subsequent section numbering changes as a result
- Added: 7 EV8280 PTZ Control Settings